RESEARCH BRIEF

Perceptions of Factors Influencing Healthful Food Consumption Behavior in the Lower Mississippi Delta: Focus Group Findings

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ABSTRACT

Objective: To identify perceptions of Lower Mississippi Delta (LMD) residents regarding factors that influence a change in healthful food consumption behavior to assist in planning sustainable nutrition interventions in the LMD.

Design: Nine focus groups were conducted with LMD residents in 9 counties in Arkansas, Louisiana, and Mississippi. One focus group was held in each county on the topical area of behavioral change.

Setting: Nine counties in Arkansas, Louisiana, and Mississippi.

Participants: The study population included 91 persons, 85 females and 6 males (18-60+ years of age), of whom 71 were African Americans, 17 were Caucasians, and 3 were Hispanics, who participated in the focus group discussions.

Analysis: Data analyses were completed by general and specific content coding. Data were reviewed for emerging themes for each topic. The Social Cognitive Theory served as the framework for understanding the determinants of a change in healthful food consumption behavior.

Results: The study showed considerable variability in perceptions that are influenced by both personal and external factors. These factors include health concerns, family influence, and need for and availability of nutrition information. Participants were interested in learning about healthful eating, food preparation skills, and portion control.

Conclusions: Focus groups in the LMD identified many important themes relevant to the development of nutrition interventions in these communities. These data will be used to guide the community-based participatory interventions that will be developed and implemented in the LMD. The findings could be applicable to other researchers designing interventions for similar populations.

Key Words: behavior change, healthful food consumption, focus groups, rural

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INTRODUCTION

Approximately 5.3 million people in Arkansas, Louisiana, and Mississippi live in the Lower Mississippi Delta (LMD) region.[1] Similar to other rural areas, adults living in the LMD are more likely to experience higher rates of chronic diseases, such as type 2 diabetes, cancer, hypertension, and cardiovascular disorders.[2-4] Mortality rates from these diseases are much higher in the LMD states than nationally.[5-6] High rates of food insecurity, poverty, unemployment, and lack of educational attainment further complicate efforts to improve health in this high-risk, predominantly minority population. Research and educational programs focusing on improving dietary knowledge and behaviors are critical to improving the health of residents in the LMD communities. Because of well-documented needs in the region, the Agricultural Research Service of the US Department of Agriculture (USDA) was directed by Congress in 1994 to study the effects of nutrition intervention on the health of the LMD population (US Senate Report 103-290).[7]

Initial research documented limited food variety and nutrient-dense food items consumed by the LMD residents. Researchers noted fruit and vegetable consumption below recommended levels; mean intakes were 0.9 servings of fruit and 2.8 servings of vegetables, with french fries accounting for 30% of the vegetable servings.[8] Comparing nutrient intake of LMD and US adults, it was observed that LMD adults had lower intakes of nutrients considered essential for health and well-being, particularly calcium and iron. In addition, LMD adults had higher dietary fat intake than US adults.[8] The region is characterized by limited availability of food choices, which may limit selection of a nutritionally adequate diet.[9] These findings demonstrate a need for interventions that would help to improve the food availability, food choices, and nutrition practices of residents in the LMD. However, there is a lack of evidence-based information regarding successful approaches for improving dietary behaviors, knowledge, and attitudes about food and health among diverse population groups in rural areas.

The Lower Mississippi Delta Nutrition Intervention Research Initiative (Delta NIRI) Consortium is developing nutrition interventions in the LMD through community-based participatory research (CBPR). This methodology has shown promising results as an approach for bringing about sustainable change in communities. Community-based participatory research is characterized by community–research partnerships, where the residents play an active role in selecting, planning, implementing, and evaluating research interventions in their communities.[10-12] Such an approach is based on the premise that health issues that affect individuals cannot be adequately addressed in exclusion of the individual's social setting, and that solutions to problems lie within the community.

Before effective interventions can be designed and implemented in a community to improve food practices, program planners must know what factors will influence behavior change in the target population.[13] Several psychosocial models of health behavior have been developed to explain beliefs and motivation of individuals for adopting preventive health behaviors. One example is Bandura's Social Cognitive Theory (SCT),[14-16] which has been widely used in dietary behavioral research.[17-21] The SCT conceptualizes behavior in terms of a 3-way dynamic and reciprocal interaction between personal factors, environmental influences, and behavior. The reciprocal nature of the determinants of nutrition behavior in SCT makes it possible for nutrition intervention efforts to be directed at personal, external, or behavioral factors.

In the current study, focus groups were used to provide information to assess resources, needs, and opportunities for planning sustainable nutrition interventions in the LMD. The focus group method has been useful in determining beliefs about nutrition and health of various groups[22-26] and in defining and planning nutrition education and intervention programs.[27-31] Using this qualitative approach to elicit information from groups adds an important dimension in which perceptions are developed partly by interacting with others.[32] The purpose of this study was to identify perceptions of factors that influence healthful food consumption among residents in the Delta.

METHODS

Study Population and Study Design

Nine focus groups were conducted in 9 counties in Arkansas, Louisiana, and Mississippi. One focus group was held in each county to determine factors that influence behavior change in the consumption of healthful food. Counties were chosen randomly from the intervention counties in the 3 states selected in the FOODS 2000 study.[5] FOODS 2000 was a cross-sectional telephone survey of a representative sample of the population 3 years of age and older in 36 Delta counties. Focus groups were conducted between July and September 2001 on different days of the week at local churches and community centers and at the Cooperative Extension Service office.

Participant recruitment was completed by a Community Readiness Team (CRT) composed of a representative from the community and university representatives. The CRT recruited participants by placing flyers at grocery stores, churches, health clinics, and libraries, and by information shared by community residents. A minimum of 8 persons was recruited for each session. A participant application form was used to screen volunteers and collect demographic data. Criteria for selection were that the prospective participant be 18 years of age or older, a resident of the selected community, and responsible for preparing meals and purchasing food for the household. Participants were served light refreshments and given a $50.00 gift certificate as an incentive to offset any inconvenience that might have resulted from involvement in the study.

Participants signed an informed consent form before

each session. Institutional Review Board approval was obtained from each of the universities involved.

Description of Focus Groups

Focus groups were conducted according to standard procedures.[32] The focus group team, consisting of a team leader, a moderator, and a recorder, was trained by Richard Krueger, a nationally recognized expert in focus group methodology and evaluation.[32] The moderator led the discussion and was assisted by the recorder, who audiotaped the discussions and took field notes. During the sessions, participants were encouraged to speak until all views were expressed, and additional probing and clarification followed. The same focus group team conducted all 9 sessions. The duration of each focus group session was 50 to 65 minutes. A quality control monitor attended all sessions and observed the structure of each session relative to delivery of questions by the moderator and taping and debriefing procedures. The quality control monitor was also available to address all field operation problems.

Focus Group Questions

Questions were designed by the research team to identify residents' perceptions of factors influencing behavior change. Discussion questions provided information on factors that would cause participants to change their consumption of healthful food (Table 1). Questions were informed by the constructs of and reciprocal interactions posited in SCT. Ten to 12 open-ended questions were developed for the topical area. Questions were arranged from general to specific.[32] University faculty and staff at 4 of the project institutions reviewed questions for content and clarity, and modifications were made based on their suggestions. Pilot focus group sessions covering each topic were conducted in the 3 states to pretest the focus group questions and methodology.

Table 1. Focus Group Discussion Questions

Behavior Change

1. Tell us your name and your favorite foods.
2. How would you describe your eating habits?
3. What does "healthy" eating mean to you?
4. Think back to a big health change you have made in your life. Tell me about one of those big changes. Probe, if not answering: It might be about your health, eating, smoking, exercise, etc.
5. When you made that change, what helped you the most? (Listen for things like: information, family friends, social support, will power, time available, medical support, etc.)
6. Let's suppose that you wanted to change the foods you eat. What would it take to get you to eat more: a) healthy foods? b) vegetables? c) fruit?
7. Suppose that you begin to make changes in foods you eat. What would help you to maintain these changes?
8. What kind of information would be helpful to you as you make changes in your eating of a) healthy foods, b) fruit, or c) vegetables?
9. Suppose you were developing a program to encourage people like yourself to eat more foods including fruits and vegetables. What would you do?
10. The goal of our discussion is to discover how to get people to eat more healthy foods including fruits and vegetables in order to be healthy. Have we missed anything?

Data Analysis

At the conclusion of each session, a moderator/recorder report, which summarized key points, notable quotes, and overall findings, was completed. Audiotapes, field notes, and moderator/recorder reports were transmitted to the focus group coordinating center. Audiotapes of the 9 sessions were released to an experienced independent transcriptionist, who transcribed the tapes verbatim to ensure validity of the data. The focus group team members listened to the tapes and compared them against the written transcript. This method enabled errors in understanding to be corrected. Using the transcripts, field notes, and moderator/recorder reports, the focus group team reviewed the data for the purpose of identifying recurring trends and patterns among the focus group sessions.[32] These data were then coded and sorted using the organizing framework of the discussion guide and the recurring trends and patterns. Topologies were constructed to determine if any data were omitted, and agreement was reached relative to the organization of the data. The focus group team, including members of the writing group, identified emerging themes from a list of most frequent responses by 3 or more focus groups and categorized according to SCT constructs. Each writing group member reviewed the summary of emerging themes to arrive at a consensus for the final summarization. The most relevant quotes were also included with the emerging themes. A descriptive summary was compiled highlighting the most frequent and dominant responses. Prior to development of the final report to evaluate consistency, data, transcripts, field notes, and summary reports were reviewed and summarized by an independent consultant.

RESULTS

The study population included 91 participants. Focus groups ranged in size from 6 to 17 individuals, with a mean size of 10. The length of time per session ranged from 50 to 65 minutes, with an average of 58 minutes. A profile of the participants is presented in Table 2. Of the 91 participants, 37% were 18 to 44 years of age, and 63%

Table 2. Behavior Change Focus Group Participants

Characteristic	Behavior Change n (%)*
Total (N)	91
Age	
18-44	34 (37)
45 +	57 (63)
Gender	
Male	6 (7)
Female	85 (93)
Race	
African American	71 (78)
Caucasian	17 (19)
Hispanic	3 (3)
Education†	
<High School	4 (4)
High School	41 (45)
>High School	43 (47)

*Percentages may not total 100 because of rounding
†3 individuals did not provide information on education level

were over 45 years of age. Most participants were female (93%) and African American (78%), and 47% had more than a high school education. The demographic characteristics of the sample were higher than the LMD region relative to educational attainment and proportion of African Americans.

This study shares some limitations common to most focus group research. The sample was not randomly selected; therefore, forming generalizations of this research is limited. However, the sample design included participants from 9 counties representing the predominant ethnic groups in the region and a spectrum of age and education. Focus group participants may not reflect the larger population. They were more educated and may possibly be more health conscious.[33,34] Participants were 93% female, likely a result of the selection criterion that specified that the participant be the person who prepared meals and was the primary food purchaser. The intervention strategies proposed may not be applicable to men. The study included only 1 discussion group per county on the topic of behavior change. Another limitation common to focus group methodology was that responses of focus group participants may have been influenced by those of other group members.[23,32] A single moderator, skilled in group dynamics and interpersonal communication, conducted all sessions, in an attempt to minimize the possibility of a few group members dominating the discussion.

The results of the focus group discussion are presented by the SCT theoretical constructs (Table 3) based on the most frequent responses by 3 or more focus groups. This study examines personal and external determinants of a change in food consumption behavior.

Table 3. Personal and Environmental Determinants of Behavior Change

SCT Construct	Number of Groups
Personal Determinants	
Motivators/perceived benefits	
Health conditions	7
Important to eat healthfully to prevent health problems, disease, and sickness	6
Health benefits and food	7
Facilitators of behavioral change	
Weekends	9
Holidays	7
Summer	5
Dinner	5
Barriers to behavioral change	
Mornings	6
Working	4
Eating out	3
Knowledge and skills	
Variety of food preparation skills	9
Meal planning skills	9
Time management skills	9
Motivating eating healthful food	8
Educating people about healthful eating	8
Buying less food with little nutritional value and more healthful food	5
Setting an example	5
Environmental Determinants	
Social environment	
Family	6
Encouragement and support from family and friends	3
Physical environment	
Availability of recipes and cookbooks	7
Nutrition education; food, nutrition, and health resources	6

Personal Determinants

After analyzing the data, the research team identified motivators/perceived benefits, self-efficacy, and knowledge and skills as personal determinants of behavior change.

Motivators/perceived benefits. Health problems were strong motivators influencing participants to make a change in consumption patterns. Participants felt that health conditions such as high blood pressure, diabetes, kidney disease, and heart disease are related to food choices. This belief can be seen in the following statements. *"If you eat unhealthy when you're young, you're going to be sick when you get old. I know a lot of kids that just overeat, and that's bad for them because the weight is there then. They'll get high blood pressure later, they're obese." "We don't really eat healthy ourselves, but my brother-in-law, he goes to dialysis, so we*

really have to watch what we feed him. We'll like separate his and not put salt on it or we'll bake his and fry ours."

A desire to avoid adverse health conditions seen in others also influenced eating behaviors. Participants gave little consideration to nutrition as a means of preventing illness and expressed greater willingness to change eating practices after rather than prior to becoming ill. Related responses included: *". . . being able to move and do so without aches or pain," ". . . losing weight because my legs were starting to bother me,"* and *"[m]ost of the time a heart attack or stroke or diabetes would do it."* Participants displayed a fatalist attitude, as seen in the statement, *"But I'm a diabetic. I'm not going to lie. I eat whatever I feel like I want to eat. I'll just accept the consequences later, down the line."*

Participants expressed interest in knowing personal benefits received from diet modification, as seen in the comment, *"What's in it for me?"* They also were concerned with increasing longevity and would contemplate nutrition changes to improve health if benefits were known. Statements in this regard were: *"I did not eat stuff like broccoli and cauliflower. I heard broccoli did something for your cancer cells. Tried it, liked it and now I eat it. Did not like or eat carrots—heard they were good for your eyesight—tried them and found that I liked them. . ."* and *"I want to be here for more than another year or so."*

Facilitators of Behavioral Change

A range of times was mentioned when it was easy for the family to eat healthfully, including weekends and holidays, at dinner, during the summer, and during the winter and fall when children are in school. Participants said that Sundays and holidays were days where they had more time to prepare a balanced meal.

Barriers To Behavioral Change

Mornings were seen as a time when it was difficult for the family to change the types of food eaten. Participants indicated that they didn't have time to prepare breakfast because they had too much to do in the morning. *"I think the hardest thing is that we don't take time with food anymore."* Eating out was indicated as a barrier to healthful eating.

Self-efficacy. Self-efficacy includes degree of confidence, strength of persistence in the face of obstacles, and commitment to continuing specific behaviors.[35] Some participants felt very capable and confident in their ability to make behavioral changes: *"You've got to do it for yourself, you've got to have will power, the commitment and you've definitely got to have prayers."* Others expressed little confidence in their ability to change and commitment to continuing specific behaviors over time: *"That's easy to say I guess, but difficult to do."*

Knowledge and skills. Preparing appealing food, time management and meal planning, portion control, and behavior modification all emerged as areas in which participants felt they needed more knowledge and skills to change their food consumption behavior. Providing information on healthful eating, buying less food with little nutritional value, and being a role model were indicated as ways to motivate behavior change. Related comments were: *"It would be nice if, along with what foods are good, if they would tell you ways to prepare them so they would still taste good and be healthful. . ." "You really have to be taught to eat it. . ." "I want somebody to show me how to do it. . ."* and *"My biggest problem is figuring out what to fix for a meal."*

External Determinants

According to SCT, the external determinants include social and physical factors. Social factors include family, friends, peers, and coworkers. Physical factors include the workplace and home.[35]

Social factors. Family members were strong motivators for changing food consumption behavior. Most suggestions to promote healthful eating focused on changes that individuals and families could make, such as preparing healthful food items for the family, being a role model for children, improving meal planning skills, and changing food preparation methods to make healthful food more appealing. Related comments were: *"My children. My boys, because my boys like to eat. . ." "I would suggest doing it for the children, because I was just thinking that maybe if my mom had raised me up eating healthier foods, preparing healthier foods, that would have been the way I would have learned to prepare and eat it and instill it in my children. . ."* and *"We talk about eating healthy, and then I try to tell my husband, we can't tell her to eat healthy if we're not eating healthy, so for us to get our child to eat healthy, we have to try to do something for her to see."*

Participants indicated that encouragement, motivation, compliments, and support from family and friends were motivators for changing behavior and maintaining that change. Responses include: *"If you've got a partner and he goes by the wayside, you're probably going to go by the wayside too. . ." "I was better when my children were home because I was in charge of someone else's health. . .. we're trained to be caregivers more so and that's how you're defined. So if you're caring for someone else, it's a lot easier to do everything in a healthier manner than if you do it just for yourself. . ."* and *". . . if someone else would prepare the food."*

The physician was an important motivator influencing participants to make a dietary change. This view is reflected in these statements: *"In order for me to eat more healthy foods, I would have to get down sick and go to the doctor and for him to tell me I had to stop eating those French fries and hamburgers. . ." "Make a trip to the doctor and they tell you your cholesterol is up and your blood pressure is up. . ."* and *"I buy*

chicken breast without skin on it, but it is because my doctor said that's what I need."

Cultural norms. Traditional cultural food patterns influence food consumption patterns. Food is perceived as an important part of traditional culture: *"We have been brought up in a food culture here—this is what we do best. We do music and food best in the state of Louisiana. That's what we're all about. We need to honor our food tradition in a healthier manner."* The Sunday meal is typically eaten and is characterized by more extensive food preparation and a greater variety of food: *"Everybody just cooks big meals on Sundays. A lot of times you have people coming over and you just prepare a lot of food."*

Other environmental factors influencing behavior change were availability of nutrition education and information from food and nutrition and health resources, availability of recipes and cookbooks, and access to home gardens. Participants indicated that they have knowledge of some helpful sources, for example, television, magazines, the Internet, food preparation classes with tasting and recipes, health department, cooperative extension, and nutrition education materials.

DISCUSSION

Focus group discussions with LMD residents revealed a variety of motivations and behaviors associated with changing eating behaviors. The study showed considerable variability in perceptions that may be influenced by personal and external determinants. Influences include health concerns, family, need for and availability of nutrition information, and social support. These findings support the theoretical tenets underpinning SCT. The reciprocal nature of the determinants of nutrition behavior makes it possible for nutrition efforts to be directed at personal and external factors. Strategies for improving nutritional health should be aimed at improving emotional, cognitive, or motivational processes, increasing behavioral competencies, or altering conditions under which people live and work.

Health is a key motivator for change in eating behavior. Adults are more likely to make changes in their diets only after they have been diagnosed with a disease.[30,36] For some African Americans, the threat of a health problem may not be considered a priority, particularly when compared to day-to-day challenges.[37] Consistent with other research findings, participants indicated that healthful eating means giving up tradition and culture, and they had a fatalistic attitude.[36] Study participants indicated a lack of information to make consistently healthful food choices. They were interested in learning about healthful eating, food preparation skills, and portion control. Similarly, researchers have shown that the barriers to developing healthful behaviors are related to knowledge, training, and experience.[30] Program planners must consider the immediate needs and priorities of participants. Interventions could include a link to economic problems such as having money to pay for food, shelter, or clothing. Interventions should avoid emphasizing the problem but should focus on positive, self-empowering themes.[37]

Participants cited traditional resources for nutrition information and expressed a willingness to use other techniques and methods. Similarly, previous research has found that participants want a variety of active learning intervention strategies.[30,38] New culturally relevant, credible, and trusted approaches for health promotion must be identified for health status indicators to improve for African American populations.[39,40] Some participants had confidence in their ability to change behavior, whereas others seemed to have been influenced by family, friends, and others. Participants in the current study indicated that the support of family and friends was important for changing behavior.

Other research has highlighted the importance placed on taste, nutrition, cost, convenience, and weight control in predicting types of food consumed.[41] Similar to previous focus group findings, [42-44] the current study indicates that pressure from children to prepare certain food, social eating, eating out, time constraints, and missing the taste of favorite high-fat food items made dietary change difficult. Consistent with findings from other studies,[30,45] time was mentioned as a barrier to behavior change. Time was an issue for households where women were working and had young children. Intervention strategies must demonstrate efficient use of time. Techniques to be taught might include demonstration of preparation of nutritious, quick meals and strategies for healthful eating outside of the home.

Understanding personal and external determinants of food choices and prospects for modifying food behavior is necessary to plan effective, culturally sensitive, and relevant health promotion interventions. Delta residents identified health issues related to disease development, social support, and family influence as factors influencing healthful food consumption behavior change.

Knowledge gained from the current study provides an understanding of the complex personal and external determinants of behavior change. Facilitators of behavior change may be influenced within the context of reciprocal social interaction.[45] Nutrition educators for this LMD population should incorporate focus group recommendations in intervention strategies. Strategic approaches include introduction of new types of food, advice from physicians and other health professionals, healthful eating for children, family health influences, and long-term benefits of behavior change. Future interventions in the LMD could focus on training physicians how to briefly discuss the importance of diet with their patients. Recommendations for interventions have been based on focus group responses and existing research findings. Therefore, nutrition educators must develop programs and interventions for this audience that: (1) consider the culture and tradition of the targeted population; (2) develop networks and support to reinforce changes

in behavior; and (3) provide training and modeling demonstrating specific behavior outcomes.

IMPLICATIONS FOR RESEARCH AND PRACTICE

Social Cognitive Theory can be successfully used as a framework in planning nutrition-related, community-based participatory interventions. Program planners, physicians, and other practitioners should provide information about linkages between good nutrition and prevention of health problems. In addition, these individuals should highlight positive aspects of healthful traditional and cultural food items in the diet. Interventions directed toward preparation of healthful food and modification of traditional and culturally specific food are needed to meet personal preferences of target populations. Consideration of these factors is crucial to help LMD residents make and maintain behavioral changes. These data will be used in the community-based participatory interventions being developed in the LMD. Practitioners outside the Delta region may also apply the research findings in counseling patients whose cultural roots are in this region.[21]

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